IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of producing an analyte ion, comprising

providing a substrate having a non-porous rough surface;

contacting an analyte with said non-porous rough surface ~~whereby~~ such that said analyte interacts with said non-porous rough surface; and

exposing said non-porous rough surface to ~~an energy source~~ a laser to produce a ionized gas phase analyte, wherein said contacting of said analyte with said non-porous rough surface occurs in situ before and after exposing said non-porous rough surface to the laser.

Claim 2 (Cancelled)

Claim 3 (Original): A method according to claim 2, wherein the analyte contacting the non-porous rough surface is a gaseous analyte.

Claim 4 (Original): A method according to claim 3, wherein the contacting of the gaseous analyte occurs by means of either a gas injector or as a gas stream directed towards said non-porous rough surface.

Claim 5 (Currently Amended): A method according to claim 1, wherein said non-porous

rough surface has ~~sub-micrometer surface features~~ a surface roughness of between about 2 nm and about 100 nm.

Claim 6 (Cancelled)

Claim 7 (Currently Amended): A method according to claim 1, wherein said non-porous rough surface has a surface roughness of ~~between about 10 nm and about~~ less than about 1 μm.

Claim 8 (Original): A method according to claim 1, wherein the substrate comprises at least one member of the group consisting of silicon, carbon, and polymers.

Claim 9 (Original): A method according to claim 8, wherein the substrate is single crystal silicon.

Claim 10 (Original): A method according to claim 8, wherein the substrate is highly oriented pyrolytic graphite.

Claim 11 (Original): A method according to claim 1, wherein said non-porous rough surface is supported on low heat conductivity material.

Claim 12 (Original): A method according to claim 1, further comprising a step of

roughening the surface of the substrate using a surface roughening treatment.

Claim 13 (Original): A method according to claim 12, wherein said surface roughening treatment comprises at least one member selected from the group consisting of etching with reactive chemicals, bombardment with hyperthermal reactive atoms, bombardment with high-energy particles, irradiation with lasers, exposure to a plasma, vapor deposition, and roughening with mechanical action.

Claim 14 (Original): A method according to claim 1, further comprising a step of analyzing a physical property of the ionized gas phase analyte.

Claim 15 (Original): A method according to claim 14, wherein said analysis is performed by means of at least one member selected from the group consisting of mass spectrometry, ion mobility spectrometry, and a current measurement device.

Claim 16 (Original): A method according to claim 1, further comprising a step of cooling the substrate prior to contacting the analyte with the non-porous rough surface.

Claim 17 (Original): A method according to claim 1, further comprising a step of adding a matrix to the non-porous rough surface.

Claim 18 (Original): A method according to claim 17, wherein the matrix is at least one member selected from the group consisting of water, glycerol, and acetic acid.

Claim 19 (Original): A method according to claim 17, wherein the addition of the matrix to the non-porous rough surface occurs by adsorption of gas phase matrix material.

Claim 20 (Currently Amended): A method according to claim 17, wherein the addition of the matrix to the non-porous rough surface occurs in situ with exposing the non-porous rough surface to ~~an energy source~~ a laser.

Claim 21 (Original): A method according to claim 1, wherein the analyte is a gaseous eluate from a gas chromatograph.

Claim 22 (Original): A method according to claim 1, wherein the analyte is obtained from ambient air.

Claim 23 (Original): A method according to claim 1, wherein said non-porous rough surface is irradiated with light of a wavelength absorbed by either of the non-porous rough surface or a matrix added to the non-porous rough surface.

Claim 24 (Original): A method according to claim 1, wherein the method is performed

under ambient pressure.

Claim 25 (cancelled)

Claim 26 (Currently Amended): A method according to claim [[25]] 2, wherein said laser repeatedly pulses said non-porous rough surface with laser light, and the contacting of the analyte to the non-porous rough surface occurs during and between the laser pulses.

Claim 27 (Currently Amended): A device for generating analyte ions comprising

substrate having a non-porous rough surface with a surface roughness of between about 2 nm and about 100 nm; and

means for exposing an analyte to the non-porous rough surface whereby the analyte interacts with the non-porous rough surface; and

energy source to supply energy at the non-porous rough surface to generate ionized gas phase analyte.

Claim 28 (Original): A device according to claim 27, wherein said non-porous rough surface is structured to interact with the analyte.

Claim 29 (Original): A device according to claim 28, wherein said non-porous rough surface is structured to promote the adsorption of the analyte on said surface.

Claim 30 (Original): A device according to claim 28, wherein said non-porous rough surface is structured to promote the formation of ionized analyte on said surface.

Claim 31 (Original): A device according to claim 28, wherein said non-porous rough surface is structured to promote the desorption of ionized gas phase analyte from said surface.

Claims 32 and 33 (Cancelled)

Claim 34 (Original): A device according to claim 27, wherein the substrate comprises at least one member of the group consisting of silicon, carbon, and polymers.

Claim 35 (Original): A device according to claim 34, wherein the substrate is single crystal silicon.

Claim 36 (Original): A device according to claim 34, wherein the substrate is highly oriented pyrolytic graphite.

Claim 37 (Original): A device according to claim 27, wherein said non-porous rough surface is supported on low heat conductivity material.

Claim 38 (Currently Amended): A device according to claim 27 further comprising:

a laser for irradiating the substrate to produce an ionized gas phase analyte; and

means for determining a physical property of the ionized gas phase analyte.

Claim 39 (Original): A device according to claim 38, wherein said means is at least one member selected from the group consisting of mass spectrometry, ion mobility spectrometry, and a current measurement device.

Claim 40 (Original): A device according to claim 27, wherein said means for exposing an analyte comprises either a gas injector or a gas stream directed toward said non-porous rough surface.

Claim 41 (Currently Amended): A method of producing an analyte ion comprising:

providing a substrate with a surface roughness of between about 2 nm and about 100 nm;

contacting a gaseous analyte with the substrate; and

exposing the substrate to ~~irradiation~~ an energy source to produce an ionized gas phase analyte~~, wherein said contacting occurs in-situ with said exposing~~.

Claim 42 (Original): A method according to claim 41, wherein the contacting of the gaseous analyte occurs by means of either a gas injector or as a gas stream directed towards said substrate.

Claim 43 (Original): A method according to claim 41, further comprising a step of analyzing a physical property of the ionized gas phase analyte.

Claim 44 (Original): A method according to claim 43, wherein said analysis is performed by means of at least one member selected from the group consisting of mass spectrometry, ion mobility spectrometry, and a current measurement device.

Claim 45 (Original): A method according to claim 41, further comprising a step of cooling the substrate prior to contacting the analyte with the substrate.

Claim 46 (Original): A method according to claim 41, further comprising a step of adding a matrix to the substrate.

Claim 47 (Original): A method according to claim 46, wherein the matrix is at least one member selected from the group consisting of water, glycerol, and acetic acid.

Claim 48 (Original): A method according to claim 46, wherein the addition of the matrix to the substrate occurs by adsorption of gas phase matrix material.

Claim 49 (Original): A method according to claim 46, wherein the addition of the matrix

to the substrate occurs in situ with exposing the substrate to an energy source.

Claim 50 (Original): A method according to claim 41, wherein the analyte is a gaseous eluate from a gas chromatograph.

Claim 51 (Original): A method according to claim 41, wherein the analyte is obtained from ambient air.

Claim 52 (Original): A method according to claim 41, wherein said substrate is irradiated with light of a wavelength absorbed by either of the substrate or a matrix added to the substrate.

Claim 53 (Original): A method according to claim 41, wherein the method is performed under ambient pressure.

Claim 54 (Original): A method according to claim 41, wherein said energy source is a laser.

Claim 55 (Original): A method according to claim 54, wherein said laser repeatedly pulses said substrate with laser light, and the contacting of the analyte to the substrate occurs during and between the laser pulses.

Claim 56 (New): A method of producing an analyte ion comprising the steps of:

1) interacting a gaseous analyte with a surface of a substrate having a non-porous rough surface;

2) producing an ionized gas phase analyte by irradiating the substrate with a laser; and

3) repeating step 1) in situ.

Claim 57 (New): The method according to claim 56, further comprising a step of repeating step 2) in situ.

Claim 58 (New): The method according to claim 56, further comprising a step of analyzing a physical property of the ionized gas phase analyte.

Claim 59 (New): The method according to claim 58, wherein said analysis is performed by means of at least one member selected from the group consisting of mass spectrometry, ion mobility spectrometry, and a current measurement device.

Claim 60 (New): The method according to claim 56, further comprising the step of roughening a surface of the substrate to have a surface roughness of between about 2 nm and about 100 nm.

Claim 61 (New): A device for generating analyte ions comprising

a substrate having a non-porous rough surface having a surface area difference that varies from approximately 20% to approximately 40%; and

means for exposing an analyte to the non-porous rough surface whereby the analyte interacts with the non-porous rough surface; and

an energy source to supply energy at the non-porous rough surface to generate ionized gas phase analyte.

Claim 62 (New): The device of claim 61, wherein a grain size of the surface area varies from approximately 10 nm to 1000 nm.

Claim 63 (New): The device of claim 61, wherein a surface roughness of the surface area is between about 2 nm and about 100 nm.

Claim 64 (New): A device for generating analyte ions using a laser comprising:

a substrate having a non-porous rough surface with a surface roughness of between about 2 nm and about 100 nm; and

an analyte interacted with the non-porous rough surface.

Claim 65 (New): A device for generating analyte ions using a laser on a non-porous rough surface substrate, an area of the substrate rate having a surface roughness of between

about 2 nm and about 100 nm and having a surface area difference that varies from approximately 20% to approximately 40%.

Claim 66 (New): The device of claim 65, wherein a grain size of the surface area varies from approximately 10 nm to 1000 nm.